WHAT IS CLAIMED IS:

1.   A method comprising:

estimating an amplitude of a signal constellation of a Quadrature Amplitude Modulated (QAM) signal, wherein the signal comprises a pilot channel and a

5   supplemental channel that includes traffic of a user and at least one other user, and wherein estimating the amplitude comprises estimating the amplitude based upon a power of a signal combination of a traffic symbol and a pilot symbol.

2.   A method according to Claim 1 further comprising:

10   demodulating the traffic of the user in the supplemental channel of the QAM signal based upon the estimate of the amplitude.

3.   A method according to Claim 1, wherein estimating an amplitude comprises:

15   estimating an expectation of the power of the signal combination;

estimating a bias based upon an energy of a difference between two consecutive pilot symbols and an energy of the current pilot symbol; and

estimating the amplitude based upon the expectation of the power of the signal combination and the bias.

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4.   A method according to Claim 3, wherein estimating the expectation comprises estimating the expectation based upon a number of symbols in the estimate and a number of active Walsh channels in the QAM signal.

25   5.   A method according to Claim 4, wherein estimating the expectation comprises:

determining the power of a signal combination of a traffic symbol and a pilot symbol for each symbol in the estimate for each active Walsh channel;

summing the powers for the symbols for each active Walsh channel into a total

30   power for each active Walsh channel;

summing the total powers for the active Walsh channels into; and

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averaging the aggregate power over the active Walsh channels.

6.   A method according to Claim 1 further comprising:

receiving, from a receiver, the QAM signal before estimating an amplitude of the

5   QAM signal constellation, wherein the signal is received over at least one slot, and

wherein estimating an amplitude of a QAM constellation comprises estimating an

amplitude over one of at least one of the at least one slot and fractions of the at least one

slot based upon a speed of the receiver.

10   7.   A system comprising:

a demapping element capable of estimating an amplitude of a signal constellation

of a Quadrature Amplitude Modulated (QAM) signal, wherein the signal comprises a

pilot channel and a supplemental channel that includes traffic of a user and at least one

other user, and wherein the demapping element is capable of estimating the amplitude

15   based upon a power of a signal combination of a traffic symbol and a pilot symbol.

8.   A system according to Claim 7 further comprising:

a master controller in electrical communication with the demapping element,

wherein the master controller is capable of demodulating the traffic of the user in the

20   supplemental channel of the QAM signal based upon the estimate of the amplitude.

9.   A system according to Claim 7, wherein the demapping element is capable

of estimating an expectation of the power of the signal combination, and thereafter

estimating a bias based upon an energy of a difference between two consecutive pilot

25   symbols and an energy of the current pilot symbol, and wherein the demapping element

is capable of estimating the amplitude based upon the expectation of the power of the

signal combination and the bias.

10.   A system according to Claim 9, wherein the demapping element is capable

30   of estimating the expectation based upon a number of symbols in the estimate and a

number of active Walsh channels in the QAM signal.

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11.   A system according to Claim 10, wherein the demapping element is capable of estimating the expectation by:

determining the power of a signal combination of a traffic symbol and a pilot symbol for each symbol in the estimate for each active Walsh channel;

summing the powers for the symbols for each active Walsh channel into a total power for each active Walsh channel, and thereafter summing the total powers for the active Walsh channels into; and

averaging the aggregate power over the active Walsh channels.

12.   A system according to Claim 7 further comprising:

a receiver in electrical communication with the demapping element, wherein the receiver is capable of receiving the QAM signal before estimating an amplitude of the QAM signal constellation, wherein the receiver is capable of receiving the signal over at least one slot, and wherein the demapping element is capable of estimating the amplitude over one of at least one of the at least one slot and fractions of the at least one slot based upon a speed of the receiver.

13.   A computer program product comprising a computer-readable storage medium having computer-readable program code portions stored therein, the computer-readable program portions comprising:

a first executable portion for estimating an amplitude of a signal constellation of a Quadrature Amplitude Modulated (QAM) signal, wherein the signal comprises a pilot channel and a supplemental channel that includes traffic of a user and at least one other user, and wherein the first executable portion estimates the amplitude based upon a power of a signal combination of a traffic symbol and a pilot symbol.

14.   A computer program product according to Claim 13 further comprising:

a second executable portion for demodulating the traffic of the user in the supplemental channel of the QAM signal based upon the estimate of the amplitude.

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15. A computer program product according to Claim 13, wherein the first executable portion estimates the amplitude by:

estimating an expectation of the power of the signal combination;

estimating a bias based upon an energy of a difference between two consecutive

5 pilot symbols and an energy of the current pilot symbol; and

estimating the amplitude based upon the expectation of the power of the signal combination and the bias.

16. A computer program product according to Claim 15, wherein the first

10 executable portion estimates the expectation based upon a number of symbols in the estimate and a number of active Walsh channels in the QAM signal.

17. A computer program product according to Claim 16, wherein the first executable portion estimates the expectation by:

15 determining the power of a signal combination of a traffic symbol and a pilot symbol for each symbol in the estimate for each active Walsh channel;

summing the powers for the symbols for each active Walsh channel into a total power for each active Walsh channel;

summing the total powers for the active Walsh channels into; and

20 averaging the aggregate power over the active Walsh channels.

18. A computer program product according to Claim 13 further comprising:

a second executable portion for receiving, from a receiver, the QAM signal before estimating an amplitude of the QAM signal constellation, wherein the signal is received

25 over at least one slot, and wherein the first executable portion estimates the amplitude of a QAM constellation over one of at least one of the at least one slot and fractions of the at least one slot based upon a speed of the receiver.

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